Fig. 3A is a schematic diagram to show directions of the fast axis at birefringence measuring points P_{31}, P_{32}, P_{33}, P_{34} and P_{35} located at respective distances r_1, r_2, r_3, r_4, and r_5 from the center O on the effective section of another optical member L_3, similar to Fig 1A. In this case, the directions of the fast axis, W_{31}, W_{32}, W_{33}, W_{34}, and W_{35}, at the measuring points P_{11} to P_{14} are such that those at the measuring points P_{31} to P_{33} are parallel to the direction of the straight line Q_3, i.e., to the radial direction, but those at the measuring points P_{33}, P_{34} are perpendicular to the radial direction. Therefore, the distribution in the radial direction of the signed birefringence values A_{31} to A_{35} at the measuring points P_{31} to P_{35} is depicted, for example, as a profile of Fig. 3B.

A1

Page 54, lines 23-26 and Page 55, lines 1-14, delete current paragraph and insert therefor:

A2

The wafer W is mounted on a leveling stage (not illustrated) and this leveling stage is set on a Z-stage 301 which can be finely moved in the optical-axis direction (Z-direction) of the projection optical

system by a driving motor 330. The Z-stage 301 is mounted on an XY stage 315 which can be moved in the two-dimensional directions (XY directions) in the step-and-repeat method by the driving motor 320. The reticle R is mounted on a reticle stage 306 which is two-dimensionally movable in the horizontal plane. The exposure light from the exposure light source 303 uniformly illuminates the pattern formed in the reticle R through the illumination optical system 302 and the pattern image of the reticle R is printed into a shot area of the wafer W by the projection optical system 304. This exposure light can be one of the wavelength selected from 248 nm (KrF excimer laser), 193 nm (ArF excimer laser), 157 nm (F_2 laser), and so on.

A2

Page 58, lines 13-26 and Page 59, lines 1-13, delete current paragraph and insert therefor:

A3

The exposure light source 303 (not illustrated) emits approximately collimated light having the wavelength of 248 nm (KrF excimer laser), 193 nm (ArF excimer laser), 157 nm (F_2 laser), or the like, and the cross-sectional shape of the collimated light at this time is rectangular. The collimated light from this exposure light source 303 is incident to a beam shaping optical system 20 as a beam shaping portion for shaping the beam into a predetermined sectional shape. This beam shaping optical system 20 is comprised of two cylindrical lenses (20A, 20B) each having a refractive power in the Y-direction; the source-side cylindrical lens 20A has a negative refractive power to diverge the X-directional beam, and the cylindrical lens 20B on the illuminated surface side has a positive refractive power to condense the diverging beam from the source-side cylindrical lens 20A into parallel light. Accordingly, after the collimated light from the exposure light source 303 passes through the beam shaping optical system 20, the Y-directional beam width is expanded, so that the cross section of the beam is shaped into a rectangular shape having a predetermined size. The beam shaping optical system 20 may also be comprised of a combination of cylindrical lenses of positive refractive power, an anamorphic prism, or the like.

Page 63, lines 9-26 and Page 64, lines 1-3, delete current paragraph and insert therefor:

The projection optical system 304 illustrated in Fig. 9 is constructed by combining the optical elements so as to satisfy the placement condition that the signed birefringence characteristic value of the entire projection optical system is not less than -0.5 nor more than +0.5 nm/cm. The optical members are also combined with each other so as to further satisfy the placement condition that the Strehl value of signed birefringence value based on the effective path of the entire projection optical system is not less than 0.93. Further, the optical members used are those satisfying the following conditions; the signed birefringence values around the center of the effective section are -0.2 to +0.2 nm/cm; the radial distribution of the mean signed birefringence values has no extremum except at the center; the difference ΔB_i between maximum and minimum of the mean signed birefringence values is not more than 2.0 nm/cm; the maximum F_i of slope of the distribution curve in the radial direction of the mean signed birefringence values B_{ij} is not more than 0.2 nm/cm per 10 mm of radial width.

A4